

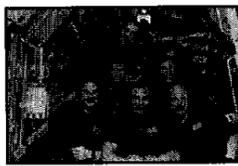


National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas



What's in a name?

A big response to the Safety Page naming contest leaves five finalists from which to pick. Story on Page 3.



Say microgravity

Pictures tell the story of the STS-73 United States Microgravity Laboratory-2 mission. Photos on Page 5.

Space News Roundup

Vol. 34

November 24, 1995

No. 46



Not long after the successful docking of Russia's Mir Space Station and the Space Shuttle *Atlantis*, STS-74 and Mir-20 crewmembers pose for a group portrait in the Mir base block. Wearing the two-tone shirts are the STS-74 crewmembers, from left, Ken Cameron, Jim Halsell, Chris Hadfield, Bill McArthur and Jerry Ross. The Mir-20 crewmembers are, from left, cosmonaut Sergei Avdeyev, ESA's Thomas Reiter and cosmonaut Yuri Gidzenko.

Atlantis-Mir docking adds new gateway

When *Atlantis* glided to a landing at Kennedy Space Center on Monday, it ended an eight-day mission that marked several milestones in the continuing program of joint U.S./Russian cooperation in space.

"I think we left a gateway open for the next five flights," Commander Ken Cameron said. "That's what it's all about—one step at a time toward the (International Space) Station."

The STS-74 astronauts successfully attached an 8,000-pound, 15.4-foot long docking module to Mir's Kristall module. The docking module will serve as the permanent docking port for all future shuttle/Mir missions.

On Flight Day 3, Mission Specialist Chris Hadfield used *Atlantis*' robot arm to grapple the Russian-built module and hoist it high over the payload bay. He then maneuvered the docking module to a position only four or five inches above the capture ring of the Orbiter Docking System in the forward section of the payload bay. At that point, Commander Ken Cameron pulsed *Atlantis*' jets, essentially flying the ODS capture ring to mate it with the docking module in a preview of the Nov. 15 docking of *Atlantis* and Mir.

With the docking module installed on the ODS and its operating systems checked out, attention turned to the early morning meeting of the two spacecraft. Late in the evening of Nov. 14, Cameron and Pilot Jim Halsell performed a series of maneuvering burns that resulted in *Atlantis*

arriving about 1,000 feet beneath Mir shortly before 11 p.m. After receiving approval from the Mission Control Centers in Houston and Kaliningrad, Cameron and Halsell began a very slow and precise approach to Mir.

Docking occurred at 12:28 a.m. CST, Nov. 15 as the two spacecraft flew over the Chinese-Mongolian border. Two and a half hours later, at 3:02 a.m. Nov. 15, the hatches between Mir and *Atlantis* were opened and the two crews—Cameron, Halsell, Hadfield, Jerry Ross and Bill McArthur; and Mir 20 Commander Yuri Gidzenko, Flight Engineer Sergei Avdeyev and Cosmonaut Researcher Thomas Reiter—greeted one another in the docking module.

For the next three days, the crews worked side by side transferring equipment, hardware, food, water and other supplies. All told, 2,132 pounds of resupply material was transferred to Mir; while 817 pounds of scientific material and hardware returned to Earth on board *Atlantis*. The *Atlantis* crew also left behind the docking module with its two side-mounted solar array canisters, resulting in an additional 9,011 pounds of material transferred from *Atlantis* to Mir.

The astronauts and cosmonauts also jointly accepted congratulatory phone calls from Russian Prime Minister Victor Chernomyrdin, NASA Administrator Daniel S. Goldin, Canadian Minister of Industry John

Please see STS-74, Page 6



JSC reopens after six-day furlough

A 24-hour continuing resolution brought more than 2,000 JSC employees back to work Monday, ending a six-day impasse between the White House and Congress over the federal budget.

A second resolution, signed Nov. 20, will keep the government running until Dec. 15, and authorizes the payment of furloughed employees who were directed to stay at home during the stalemate.

Acting JSC Director George Abbey said, "The NASA and contractor team did a great job of supporting STS-74 and getting us ready for the next set of missions coming in 1996. We need to stay focused on

supporting those missions, the construction of an International Space Station and the challenging tasks we have ahead of us."

The Office of Personnel Management late Tuesday released a detailed set of instructions so that timekeeping/payroll issues related to the furlough will be handled uniformly throughout the government. This guidance provides that for periods of time during which employees were furloughed, they must receive the same pay they would have received for an equivalent amount of work performed for their agency. Detailed instructions are being prepared for center timekeepers to support nor-

mal payroll processing activities next week.

"Our goal is to be able to get the time cards done so that the next payroll gets sent on time and no one misses a paycheck," said Human Resources Director Harvey Hartman, who is working out the details with JSC Comptroller Wayne Draper.

With the government reopened for business, the nation's leaders will focus back on the difficult task of approving a budget that both sides of the aisle will find palatable. No action was expected on NASA's budget until Congress returned from the Thanksgiving recess.

Equal Opportunity to encourage inclusive work environment

JSC's Equal Opportunity Programs Office is being reorganized to better serve the needs of the JSC workforce and to make more efficient use of fewer resources.

The reorganization revolves around two primary changes—the elimination of special emphasis areas for its Equal Opportunity Specialists and the abolition of all special emphasis program committees, said Equal Opportunity Programs Director Estella Hernandez Gillette.

EO Specialists will retain that title, but will no longer bear titles depicting special areas of expertise, such as American Indian Program Manager or Black Employment Program Manager.

All special emphasis committees will be abolished. Instead, a 10-12 member Cultural Advisory Group will represent the entire civil service JSC workforce, including women, special emphasis groups, nonminority males, people over 40 years of age, employ-

ees with disabilities, and the union.

The CAG will support the activities of the EOPO and provide input on diversity-related issues that may be unique to a particular culture or group. In the near future, a call for nominations for membership to the CAG will be issued.

"We are grateful to the many people who have served on the various special emphasis committees over the years," Gillette said.

To achieve the greatest results,

she added, the primary focus of the EOPO's cultural programs will be the annual American Heritage Day activity. Other cultural programs will be presented as the CAG determines a need but will be limited in number and length. Other possible EOPO-sponsored events will include:

- Martin Luther King/Black History Month in January/February.
- Women's History Month in March.

• Secretaries Week and Bring Your Children to Work Day in April.

- Asian Pacific American Month Observance in May.
- American Heritage Day and Juneteenth in June.
- Hispanic Observance in September/October.

The new organization should enable the EOPO staff to better serve the entire JSC workforce. For more information or to comment, contact Gillette, at x30603.

NASA Wind satellite detects huge interplanetary disturbance early

A NASA spacecraft detected a huge interplanetary disturbance which struck the Earth's protective magnetic field last month, producing a magnetic storm and auroral displays, or "Northern Lights," that persisted for two days.

The phenomenon was visible in the United States as far south as Denver, according to scientists at NASA's Goddard Space Flight Center, who reported critical satellite data to other government agencies and scientists around the world.

The information was relayed electronically to the U.S. Air Force and to the National Oceanic and Atmos-

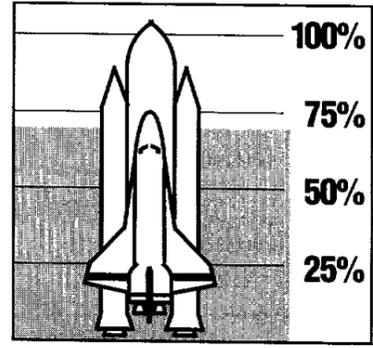
pheric Administration's Space Environment Laboratory, in Boulder, Colo., where evaluators issued an updated "space weather alert" to commercial satellite operators, electrical utilities and other organizations worldwide.

"The rapid response to the Wind observations and the prompt issuance of the alert were made possible by advanced data systems, technology and networks," said Dr. Keith Ogilvie of Goddard, NASA's Project Scientist for Wind. The central processing and distribution systems were developed and implemented by NASA and

supported by the Wind science teams, NOAA, the Air Force, and international partners.

The disturbance, called a "giant magnetic cloud," was 65 million miles across and speeding toward the Earth at over 2.1 million miles per hour when it was detected at 2 p.m. CST on Oct. 18 by NASA's Wind spacecraft. Wind is an unmanned spacecraft patrolling interplanetary space 662,000 miles from Earth, pointed toward the Sun. Invisible to normal telescopes and to the human eye, the cloud was composed of magnetic fields

Please see WIND, Page 6



1995 GOAL: \$460,000



There's still time to contribute to federal campaign

JSC's Combined Federal Campaign has been extended to Nov. 30 to allow employees who were not able to turn in their contributions during the furlough a chance to do so.

The CFC, which began Oct. 16, is almost 70 percent of the way toward its 1995 goal of \$460,000. The theme for this year's 1995 CFC of the Texas Gulf Coast, of which JSC's efforts are a part, is "Change Lives: Share the Spirit."

Last year, JSC employees gave \$459,000 of the \$2.3 million contributed by federal employees throughout the Houston area. This year's CFC goal is \$2.4 million.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

EAA Christmas Dinner/Dance: Dec. 9 Tickets cost \$22.50.

Dickens on the Strand: Dec. 2 and 3. Tickets cost \$6.30.

Houston Aeros Hockey: Houston Aeros vs. Utah Grizzlies at 7 p.m. Dec. 29 in the Summit. Tickets cost \$12.50.

Sea World: Tickets cost \$23.50 for adults and \$16.25 for children 3-11.

Space Center Houston: Discount tickets, adult, \$8.75; child (3-11), \$7.10.

Metro tickets: Passes, books and single tickets available.

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4; Sony Loew's Theater, \$4.75.

Stamps: Book of 20, \$6.40.

Sweetwater Pecans: \$5.60 per bag.

JSC history: *Suddenly, Tomorrow Came: A History of the Johnson Space Center.* Cost is \$11.

JSC

Gilruth Center News

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

EAA badges: Dependents and spouses may apply for photo identification badges from 7 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays. Dependents must be between 16 and 23 years old.

Winter softball league: Teams interested in playing call the Gilruth at x33345.

Aerobics: Classes meet 5:15-6:15 p.m. Tuesday, Thursday and Friday and 9:30-11 a.m. Saturdays. Cost is \$35 for 11 weeks.

Women's self defense: Martial Arts training for women only from 5-6 p.m. Tuesdays and Wednesdays. Cost is \$25 a month.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Nov. 30 and Dec. 12. Pre-registration is required. Cost is \$5.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays.

Aikido: Martial arts class meets from 5-7 p.m. Wednesday. Cost is \$25 per month. New classes begin the first of each month.

Ballroom dancing: Cost is \$60 per couple. For additional information call the Gilruth Center at x33345.

Country and western dancing: Beginner class meets 7-8:30 p.m. Monday. Advance class meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

Fitness program: Health Related Fitness Program includes a medical examination screening and a 12-week individually prescribed exercise program. For more information, call Larry Wier at x30301.

JSC

Swap Shop

Property

Sale/Lease: Townhouse Queens Court II, Nassau Bay, 3-2.5-2, \$895/mo or \$93.3k. Marilyn, 333-1700.

Sale: 130 cleared acres, 5 pastures, 15 mi east of Tyler, house, hay & horse barns, all amenities. 488-5058.

Sale/Trade: League City, Ellis Landing, 4-2-2, w/2 story dutch barn 12x16, \$89.9k, will take your house or condo in trade. x41929 or 332-3775.

Sale: Clear Lake Forest, 4-2.5-2, glass walled den family room, FPL, w/hi ceiling, formals, new roof & paint/carpet/paper. 326-2307.

Sale: Taylor Lake Estates wooded lot 90' x 135', can finance, \$39.5k obo. Don, x38039 or 333-1751.

Sale: OakBrook West, 2 story, 4-2.5-2, home warranty, \$124.5k. x35019 or 488-2756.

Lease: Waterfront condo, W/D, microwave, FPL, fans, sec gate, avail 12/01/95, \$750/mo. 326-4915.

Rent: Condo in Winter Park, Co., 2-2, hot tub, heated pool, sleeps 6, ski season & spring break avail. 488-4453.

Rent: South Lake Tahoe cabin, 3-2, kitchen, W/D, cable TV/VCR, microwave, sleeps 8, skiing, \$75/ntly except holidays. x41065 or 326-2866.

Rent: Galveston condo, furnished, sleeps 6, Seawall Blvd & 61st ST, wknd/wkly/dly rates. Magdi Yassa, 333-4760 or 486-0788.

Rent: Cancun Sunset club, 1-2, sleeps 6, kitchen, jacuzzi, beachfront, avail 11/18 - 11/25 or other wks, \$750/wk. Paul, x41063 or 338-4535.

Rent: Arkansas cottage overlooking Blue Mt. Lake, furn w/antiques, huge stone FPL, \$250/wkly or \$50/dly. Corcoran, x47806 or 538-1681.

Cars & Trucks

'87 Chevrolet Cavalier, 5 spd, A/C, 100k + mi, \$1.6k. 991-0821.

'84 Mazda RS-7, GSL-SE, black/red, 5 spd, sunroof, AM/FM/cass, P/W, A/C, good cond, \$2,950. 582-0415.

'87 Grand Am SE Turbo, black, all pwr, new engine & turbo, 57k mi, 1 owner, ex cond, \$3.1k. Chuck, 282-3588.

'88 BMW 325iS, 6 cyl, custom paint black w/tan leather interior, recaro seats, pwr, sunroof, ex cond, 85k mi, \$11k obo. 549-7311.

'88 Dodge Grand Caravan LE, V6, pwr, loaded, dual A/C, good cond, 1 owner, \$5,995 obo. 480-2507.

'71 Chevy El Camino, 90% complete, running 350 eng, \$1k obo. Bobby, 997-9031.

'85 Lincoln Town car, loaded, 1 owner, new transmission, good cond, leather seats, 89k mi, \$4.9k. 488-0123.

'93 Dodge Ram 1/2 ton PU, 360 V8, 2WD, ext cab, loaded, camper shell, 39k mi, \$13.9k obo. x41065 or 326-2866.

'74 Mercedes 280, 1 owner, 113k mi, 4 dr, sunroof, never wrecked. 333-1789.

'87 Pontiac Grand AM Se, 2 dr, blue, pwr, 62k mi, new tires, ex cond, \$4k. 280-8125.

'86 Parisienne Brougham, clean, 4.7L, auto cruise, 1 owner, AM/FM/cass, trailer, P/S, P/W, P/L, new tires, \$3.6k firm. Robert Lewis, 488-1800.

'92 Nissan PU, A/C, auto, AM/FM/cass, 94k mi, needs paint, \$4.2k. x31443 or 997-8044.

'90 Isuzu Impulse, 5 spd, A/C, AM/FM/cass, 92k mi, \$3.5k. x31443 or 997-8044.

'90 Nissan Sentra, 41k m, new tires, new battery, \$3.9k. 480-8682.

Boats & Planes

'93 Kawasaki Jet Ski Super Sport XL, ex cond, low hours, 750cc engine, dual carb, single trailer, \$5.5k. Jay, 282-6759.

Jet Skis, 750 SL Polaris, Sport Two Sprit Wet Jet, both ex cond, \$7.5k. 338-9776.

Viking deck boat, 19', 135hp Johnson, Bimini top, 2 skis, \$4.4k. 333-8411.

'90 Vip Valiant, 19', '93 Merc O/B, ex cond, cove/canopy, access, \$9.4k obo. Jerry, x38058.

Sunfish sailboat w/racing sails, all nice, \$300. 326-3706.

Audiovisual & Computers

Nintendo System w/8 games, \$100; Sega Genesis 16-Bit System w/8 games, \$125; electronic chess board, \$30; Pioneer Bass-Reflex TS-X200 speakers, \$25; Audiovox 50w cassette car stereo, \$25. Shelly, x39450.

Pentium 75 & 100, full warranty, ex cond, \$1,699/\$1,899; 386 w/color monitor, \$365; 286 w/color monitor, \$225. Don, x38039 or 333-1751.

486/33, 4MB RAM, 80MB HD, 5.75 & 3.5 floppies, keyboard, trackball w/extras, \$700. x49745 or 585-1031.

Focus Ether Lan SC SCSI to Ethernet Macintosh Adapter, \$85. 480-3424.

Panasonic KX-P1124 printer w/stand, paper, ex cond, \$50. Rusty, x38167.

Citizen printer "CSX-140" w/GSX color option, ex cond, \$199. Magdi Yassa, x333-4760 or 486-0788.

Rolodex 128k pocket organizer, w/manual, \$60. Tom Clark, x49842.

Microsoft FoxPro for Windows 2.5, \$30; Wildcat BBS 4.0, \$25; Delrina Winfax Pro for Windows 4.0, \$30. 332-4466. Bill, x47311 or 326-2326.

Pets & Livestock

Puppies, Spaniel-Akita/Chow mix, 1 solid white w/black face, other one gray. x41922 or 481-9301.

Burmese Python, 9', 3 to 4 yrs, \$200 firm. Robert or Mary, 489-3278.

Free dog, 11 yrs old, part Border Collie, needs large yard. 480-3424.

JSC

Dates & Data

Today

Cafeteria menu: Special: tuna noodle casserole. Total Health: baked potato. Entrees: steamed salmon steak, baked chicken, fried cod fish, ham steak. Soup: seafood gumbo. Vegetables: French cut green beans, cauliflower with cheese, green peas, black-eyed peas.

Monday

Cafeteria menu: Special: breaded cutlet. Total Health: crispy baked chicken. Entrees: stir fry pork and rice, baked chicken, smoked sausage with German potato salad, French dip sandwich. Soup: cream of broccoli. Vegetables: okra and tomatoes, peas, navy beans, baby carrots.

Tuesday

Artemis Society meets: The Artemis Society will meet at 7 p.m. Nov. 28 at the McDonnell Douglas Bldg. at 13100 Space Center Blvd. Rm. 1300. The focus of the meeting is to discuss plans for the Artemis Project's manned lunar base. For more information call Michael St. George at 783-0727.

Photo club meets: The Bay Area Photo Club will meet at 7:30 p.m. Nov. 28 at the Faith Covenant Church. For more information call Kelly Prendergast at x37655.

BAPCO meets: The Bay Area PC Organization will meet at 7:30 p.m. Nov. 28 at League City Bank. For additional information call Guy Thibodeaux at 333-5340.

Cafeteria menu: Special: fried chicken. Total Health: vegetable lasagna. Entrees: Salisbury steak, steamed pollock, vegetable lasagna, French dip sandwich. Soup: split pea and ham. Vegetables: mixed vegetables, French cut green beans, pinto beans, vegetable sticks.

Wednesday

Toastmasters meet: The Space-Land Toastmasters will meet at 7

a.m. Nov. 29 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Elaine Trainor, x31034.

Astronomy seminar: The JSC Astronomy Seminar will meet at noon Nov. 29 in Bldg. 31, Rm. 129. Dr. Nadine Barlow will discuss "Hawaii DPS Meeting." For more information, call Al Jackson at 333-7679.

Cycle club: The Space City Cycle Club will meet for a 25-mile ride beginning at 6 p.m. Nov. 29 at the University of Houston Clear Lake soccer field. For more information on this ride and weekend rides call Mike Prendergast at x45164.

Cafeteria menu: Special: stuffed bell pepper. Total Health: baked potato. Entrees: stir fry chicken & rice, wieners & beans, fried fish, western special, beef, chicken sausage, Reuben sandwich. Soup: seafood gumbo. Vegetables: buttered rice, Italian green beans, corn O'Brien, peas and carrots.

Thursday

SBR meets: The Space Business Roundtable will meet at 11:30 a.m. Nov. 30 in the Hess Bldg. at 3121 Buffalo Speedway. Jim Barlow will discuss "An Imperfect Look at the Future." Luncheon tickets cost \$12 for members and \$15 for non members. For more information call Phyllis Thompson at 333-2209.

Radio club meets: The JSC Amateur Radio Club will meet at noon Nov. 30 in Bldg. 16 Rm. 253. For more information call Larry Dietrich at x39198.

Cafeteria menu: Special: barbecue smoked link. Total Health: roasted turkey breast. Entrees: turkey and dressing, beef stroganoff, steamed pollock, French dip sandwich. Soup: tomato Florentine. Vegetables: Spanish rice, lima beans, buttered squash, oriental vegetables.

Friday

Cafeteria menu: Special: meat

sauce and spaghetti. Total Health: baked potato. Entrees: rainbow trout, liver and onions, beef cannelloni, ham steak, fried cod fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: steamed broccoli, breaded okra, cut corn, black-eyed peas.

Dec. 5

ABWA meet: The Clear Lake Area Chapter of the American Business Women's Association will meet at 5:30 p.m. Dec. 5 at Space Center Houston's Silver Moon Cafe. For more information call Nancy Hutchins at x34006.

Dec. 12

Photo club meets: The Bay Area Photo Club will meet at 7:30 p.m. Dec. 12 at the Faith Covenant Church. For more information call Kelly Prendergast at x37655.

Dec. 13

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 a.m. Dec. 13 in the executive dining room in the Bldg. 3 cafeteria. For more information call Michael Ruiz at x38169.

SSFF meets: The Space Station Future Fighters will meet at noon Dec. 13 at the Freeman Memorial Library at 16602 Diana. For information call David Cochran at 335-0185.

Dec. 14

Airplane club meets: The MSC Radio Control Airplane Club will meet at 7:30 p.m. Dec. 14 at the Clear Lake Park Community Bldg. For additional information call Bill Langdoc at x35970.

Dec. 19

NTA meets: The National Technical Association will meet at 6:30 p.m. Dec. 19 at Texas Southern University School of Technology Rm. 316. For more information call Carrington Stewart at x31404.

Household

Hoover upright vacuum cleaner, excellent condition, \$50. 486-8266.

Oval dinette table, 32" x 46", \$75; 3 shelf book case, \$20. 998-7006.

Flexsteel tufted sofa, excellent condition, \$200 obo. Hal, x30503 or 488-2273.

6 Cargo style dining room chairs, medium pine w/ I mauve back & seat, \$150; Oak entertainment pier/curio cabinet, 75"Hx24"Wx16.5"D, \$100. 482-0482.

Bookcase/entertainment center, \$25; pair of rattan bar stools w/padded swivel seats, \$60; 2 large Papasan frames with foot stools, excellent condition, \$75/set. 480-3643.

Ivory manmade leather sofa/loveseat, \$375. 996-0152.

Antique dining table, 45"x70", oak/pine inlay, \$550; antique white iron baby bed, \$225. 488-3588.

GE electric washer, 2 cycles, heavy duty, almond, works great, \$150. ML, x38604 or 474-2615.

Sectional sofa, 3 pieces, ex cond, \$700. 534-4040.

Love seat, brown velour print, good condition, large size, \$75. 244-0250.

Pair decorator tables, glass tops, gold trim, ivory color bases, 17" x 53" & 27" x 26.5", ex cond, \$150 both; love seat, ex cond, \$250; gold leafed frame mirror, 27" x 36", \$85; coffee table very thick glass over decorator oriental stands, \$350. 488-5564.

Custom made 8' ash dining/Harvest table w/side benches, \$125. 326-4316.

Wanted

Want In-line skates, w/ or w/o pads & gloves, women's size 9 or 9.5, Bauer, California Pro or similar brand, good cond. 866-0883.

Want personnel to join VPSI vanpool departing Meyerland Park & Ride at 7:05 am for JSC. Van pool consist of on-site personnel working 8 am/4:30 pm shift. Don Pipkins, x35346.

Want personnel to join VPSI Vanpool, departing South Braeswood Park & Ride lot, 6:50 a.m. for JSC & offsite locations, 7:300 - 4:30 shift. Susan Gaynor, 282-5447 or Al Ruder, x34997.

Want homestate to share 3-2.5, 4 story waterfront townhouse with 1 other person, amenities include community pool, private hot tub & tanning bed, 2 decks, boat slip, \$595/mo + 1/2 utilities, avail 12/01. Terry, x39234 or 338-1443.

Want the person who purchased a Snapper mower from me this summer to call. I have additional accessories for you. 332-2229.

Want lightweight reclining baby stroller w/storage: girls winter clothes for 9-12 mo baby; books & music tapes for kids 1-4 yrs. Tess, 488-0949.

Want canoe, Jon boat, small outboard motor, electric trolling motor. Gene, x38020 or 334-1505.

Want a nice dog house, preferably an Igloo style dog house. x41922 or 481-9301.

Want used or new TI 65 Technical Analysis calculator, will pay top price. x34557 or 485-1541.

Want to buy Disney's Little Mermaid video. x31450.

Want to buy Go-cart. Marcy or John, x31986 or 481-3418.

Want 3/4 ton pickup, ext cab, 350 V8, auto, A/C, 60 - 100k mi. Gary, x33786 or 835-3200.

Want VCR remote for Sharp model #VC6610U. Jim, x38624 or 475-9671.

Miscellaneous

Day-Timers Planner, leather, zipper notebook, full 8.5 x 11 size, desk paper punch, \$30; 14k diamond cut rope bracelet, 2.5mm wide, 7" long, \$50. Eric, x31917.

Peugeot 12 speed men's bicycle, 50 cm PH-10 Carbolite frame, alloy components, ex cond, \$100. 486-8266.

Nissan pickup tailgate, ex cond, black, \$100.; chrome bumper, \$75. 771-0955.

Russian language tutor, native speaker. Julia Sochinska, 333-3012.

Childcraft Crib-n-bed converts into toddler bed/chest of drawers, white w/pastel drawer handles. 244-7951 or 486-5959.

Bassett babybed solid oak, ex cond, \$75; small white baby crib that rocks, \$50; 2 car seats \$5 ea; full size refrigerator, \$50; dining room set w/4 chairs, \$15; ent center, \$25. Kay, x33621.

Black bedliner for Toyota truck, \$100. 480-3424.

Coleman camp stove, 2 burners, ex cond, \$25; 282-3419.

Mens ski boots, Nordica Synthetic, sz 11.5, ex cond, \$150 obo; Rieckle, sz 10.5, rear entry, \$40 obo; 2 men's suits, all wool, sz 42 jackets, ex cond, \$150 ea obo. Paul, x41063 or 338-4535.

Sony RMX14 remote commander sys for car CD changer, \$50; green brass hdbd & frame, \$20 ea; coffee grinding mach, \$10; plumed pen w/crystal base, \$15; blk leather car mask for Honda CRX, \$50; beige mini-blinds, \$4 ea; wedding cake top \$15; desk lamp, \$5; leather briefcase, \$75. Su, x45722.

Lifestrider 3325 Treadmill, 0-6 mph, auto incline, heart rate monitor, digital display, ex cond, \$275. 480-3643.

Nordic Trac, cross country ski exerciser, ex cond, \$200; 30 gal aquarium w/wood stand, external filter & aerators, ex cond, \$100. 488-7572.

Youth compound bow, Bear Silver Magnum, 25#-45#, R.H., \$50; Recurve Ben Pearson Maverick #196, 45", 25#, \$25; Jennings compound bow, 70#, R.H. w/sights, holder, \$75. 335-5517.

Honda gear child bike seat, 2 baby strollers, girls clothes infant/toddler, carrier. Currie, 34703 or 480-7796.

Train table for display, 4x7, \$60; ladies mink leather trim coat, size L, \$1k; spa-in-ground, seats 6, cover/pump/timer, vacuum, \$850. 488-3588.

Lawn mower w/bag, needs work, \$25; Sears Gas edger, good cond, \$60; roll-away bed, single sz, \$40; Toyota wheels, new (4) \$15 set. 486-9191.

Life Gear stepper/climber, ex cond, \$125; DP fit for Life Home Gym, \$125; World Cup soccer super Nintendo game, \$16; antique brass FPL set, \$16. x37130.

2 wknd nights for 2 at Best Western Motel on W. Bay Area, \$50 reg \$120+, good to 4/01/96. Jack, x33741 or 488-1222.

Dog kennel, 2 panels, 6'x6'x6', 1 panel 6'x6'x6' w/gate, dog house, \$200. x40038 or 332-6796.

Vitamaster exercise bike w/40 lb flywheel, ergometer, \$75. Tess, 488-0949.

Hand quilted, one of kind quilts, must see to appreciate. x37553 or 946-7860.

Dog house, nice, 32x36 base, aluminum & wood construction, \$60 firm; trailer hitch for Jeep Wrangle, ball type, ex cond, \$40. John. x31114 or 486-089

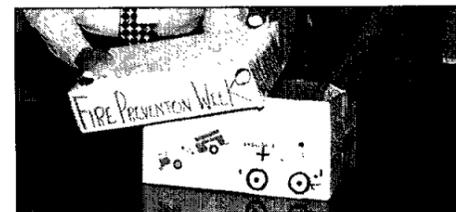
?

Safety Page

A publication of the
NASA Johnson Space Center
For Employees'
Safety and Health

November
1995

**Close Calls:
accidents don't have
to happen**



Smoke detector winners

Safety, Reliability, and Quality Assurance officials draw winning names in the smoke detector give-away. Story on Page 4.

Safety page name needs more employees' input

By Rindy Carmichael

Judges are having such a hard time selecting a winner of the contest to rename the Safety Page that the contest's sponsors have decided to ask JSC employees to make the final decision.

The JSC Director's Office received almost 500 suggestions that reflected the principal themes of JSC's intensified safety consciousness—safety, health and employee involvement. Those entries have been narrowed down to five finalists, and JSC Acting Director George Abbey has asked for a vote by employees to select the winner.

"It's not my safety page, it's everyone's safety page. The page is an employee newspaper—written by employees for employees," Abbey announced in a memo to all JSC employees. "Now you will be the final judge."

Everyone is asked to choose a favorite name from the top five entries chosen by the judges. Votes may be submitted using a ballot on the JSC Announcement and sending it to mail code AC12 by Dec. 1. The person who originally submitted the winning entry will receive a personal parking spot for a month or dinner for two at the restaurant of his or her choice.

The top five entries are *In Harm's Way*, *Safety is No Accident*, *Soundoff for Safety*, *The Shield and Safety Haven*.

"When our subcommittee came up with the idea for this contest we didn't envision the fantastic response we would receive," said Larry Neu, chairman of the Communication and Employee Ownership subcommittee. "I had a stack of suggestions about six inches high on my desk."

Judges Brig. Gen. Charlie Bolden and Texas State Trooper Steve Hargett, both of whom were speakers at JSC's Safety Awareness Day, said they worked diligently to select the

winner, but were unable to decide on just one.

"When Trooper Steve called me back with his top 10 picks from the entire list of suggestions, he said it was one of the more difficult tasks he has done because of the high quality and imaginative ideas from the suggestions," Neu added.

"It proves to me that the safety page and the other safety initiatives we have established or strengthened at the center are making a difference in people's awareness of safety issues," he explained. "Thanks to all who sent in a suggestion or who will vote to select the winning entry. And

especially thanks to all who are making JSC a safer place to work."

The decision to let employees name the page is intended to demonstrate the center's commitment to involving all of its employees in a continuing effort to pull together and make JSC a center of excellence for occupational safety and health, Neu said.

One way to accomplish that goal is through education and information. The safety page is designed to keep employees aware of current safety issues and concerns with informative articles about tools and techniques that will help employees work safely.

Gore calls safety plan model for reinvention

By Rindy Carmichael

Vice President Al Gore told JSC employees and others gathered for the recent 11th annual National VPPPA Conference that the association is helping reshape the future character of American government.

The National Voluntary Protection Programs Participants Association Conference offered those who gathered in Washington, D.C., information about the Occupational Safety and Health Administration's Voluntary Protection Program and gave JSC representatives a chance to further explore the possibility of JSC's entrance into the program as a Center of Excellence in Occupational Safety and Health.

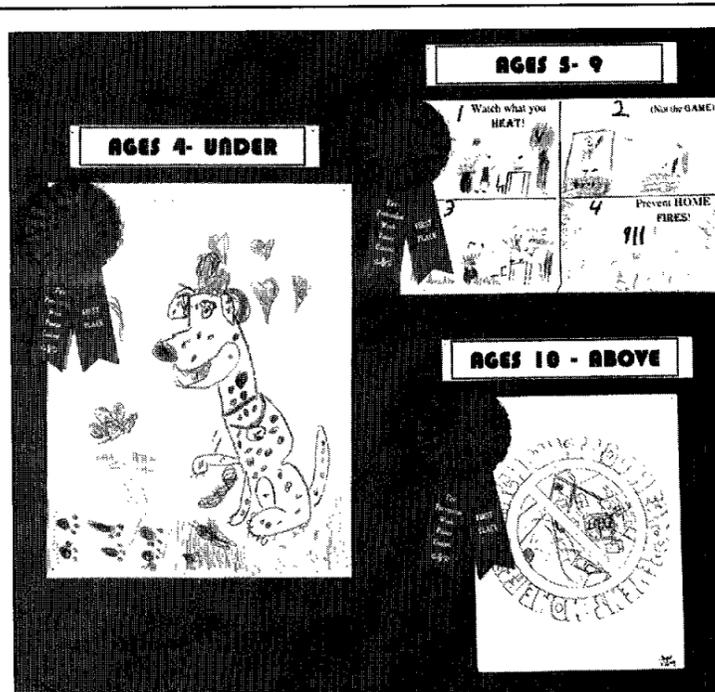
Gore said the VPP is a prime model of reinventing government that builds on the benefits of working together with common goals. He applauded the association's efforts in "helping to reshape the future character of American government into a partnership of, by and for responsible citizens."

Adele McCormack, conference

and education coordinator for VPPPA, estimated that more than 1,200 people attended, up 23 percent from last year. Participants ranged from management personnel to hourly employees representing a variety of industries including government, chemical, energy and environmental services. The mission of the VPPPA conference was to provide a forum where workers, managers, and occupational and environmental health and safety professionals from a wide variety of industries could network and share their ideas on the best safety, health and environmental practices and programs in the nation.

"The conference was a great success in terms of educational benefits in many aspects of OSHA's VPP compliance and recognition," said Richard Holzapfel, assistant chief of the Health, Safety, and Environmental Compliance Office. "The participants gained valuable knowledge in the areas of site reviews, ergonomics, environmental

Please see **CONFERENCE**, page 4



Fire Prevention picture contest first place winners were, age 4 and under category—Katy Collins, 4 year old daughter of Sean Collins; age 5-9 category—Justin Garza, 7-year-old son of Loretta Garza, of the Office of Inspector General; and age 10 and above category—Joyce Wang, sponsored by Shu-Jane Chen, of Loral Space Information Systems.

Ribbons awarded for fire posters

Children of many JSC employees have a new awareness of fire safety thanks to a recent poster contest, and a few even have prize ribbons as proof.

The contest, part of Fire Prevention Week, observed Oct. 8-14, was open to the children of civil service and contractor employees.

Based on this year's theme, "Watch What You Heat, Prevent Home Fires," children created their own drawings and displayed them in the Bldg. 25 fire station. The Houston Fire Department judged the three categories and awarded ribbons Oct. 13.

First place winners were: age 4 and under—Katy Collins, 4, daughter of Sean Collins, Hernandez Engineering; age 5-9—Justin Garza, 7, son of Loretta Garza of the Office of Inspector General; and age 10 and above—Joyce Wang, sponsored by Shu-Jane Chen, of Loral.

Director's Corner

At a recent Executive Safety Committee meeting, we reviewed the results of the Aug. 30 Safety Awareness Day activities. Overall, the results were encouraging—most of you rated the day's activities as valuable enough to justify taking time away from your primary



jobs. Ratings on the morning program elements were also high. As each director presented the results of their afternoon programs, there obviously was a great deal of work and innovation put into these programs. I commend all of you for your efforts. As part of the metrics from the afternoon programs, there appeared to be a consistent trend emerging. Each organization had consistently lower ratings for employee involvement in safety. Safety programs can only be successful if there is involvement on everyone's part. One of the primary

elements of improving our safety program must be on how to increase employee involvement, not only for events such as Safety Awareness Day, but on a day-to-day basis in the workplace. I would encourage you to present any ideas that you may have on increasing employee involvement to your facility manager, or a member of your directorate safety council, or your safety and health professional who attends the contractor safety forum. Let's make JSC a better and safer place through increased employee and management involvement.

COD reviewed by survey team

By Bob Gaffney

JSC's Center Operations received good marks overall for its safety activities in a recent survey by an independent external review team, although inspectors led by the U.S. Navy Safety Center in Norfolk, Va., did have a number of suggestions for improvement.

COD was the second JSC organization to undergo the external safety assessment, which probably will be the last until the Executive Safety Committee can complete plans for a centerwide independent safety review. The external safety survey initiative resulted from a recommendation of the Safety Review Board conducted during the summer of 1994 and is being implemented by the ESC.

The review team, comprised of experts from various safety fields, including personnel from the Department of Defense and industry, was complimentary of JSC's progress in the area of emergency preparedness and noted that "significant and impressive progress"

had been made in the Center's ability to respond to emergencies, including hazardous materials incidents.

Center Operations Director Jim Hickmon volunteered for, and welcomed the comprehensive safety survey of his organization's activities.

"Our employees, managers, and institutional support operations will benefit from this survey by aiding us in the identification of in-house processes, safety vulnerabilities or hazardous conditions that could hurt people or damage equipment if not corrected," Hickmon said.

The survey team arrived Aug. 21, and reviewed Center Operations' facilities and observed operations over a three-day period after an orientation tour and introductions to directorate managers. The team was provided points-of-contact in each work area, and was then released to interview workers and observe work practices at their own pace.

The survey team offered a number of improvement suggestions regarding hazardous materials processing, reductions in paperwork, improve-

ment in design processes, implementation of a driver safety program, and an emphasis on the continuous review of operating processes and procedures to ensure currency and reasonableness. In addition, the team noted areas of potential safety discrepancies for consideration. They also recommended that JSC continue to focus on emergency preparedness activities between JSC organizations and the community.

At the conclusion of the survey, the Review Team debriefed Hickmon and his staff. "There were no safety 'show stoppers' within our facilities or in our operating procedures," Hickmon said, "and we initiated efforts immediately to correct specific items suggested by the Review Team."

The ESC recently decided an external survey of the whole Center would be more advantageous than focusing on one organization at a time. The Health, Safety and Environmental Compliance Office will coordinate that effort. Organizations will be provided details of the survey project as soon as they are available.

Reporting close calls could have prevented accident

Most effective option would have been to notify vehicle owner directly about protruding nails

By Dan Clem

A JSC employee suffered minor cuts recently when he walked into some nails protruding from a scrap of lumber in the back of a truck, but the incident could have been avoided if other employees had reported their earlier close calls with the spikes.

While the employee escaped serious injury, the nails were at eye level and could have caused a serious puncture wound, according to a safety representative who reported a close call to the Health, Safety and Environmental Compliance Office.

Several people admitted to having noticed this "accident waiting to happen" but failed to react or report it. The privately owned truck apparently had been in the Bldg. 7 parking lot for three or four days prior to the incident. Another close call involving the same vehicle had occurred the previous morning when an employee missed hitting the wood only because of a shouted warning from another employee.

A close call report would have led to the removal of the wood, or at least the application of a red flag warning passersby of the potential

danger.

The most efficient method would have been to contact the owner of the vehicle directly, and ask that person to eliminate the hazard, but there were a number of other avenues available to those who saw the hazard—the Close Call System, the Safety Action Hotline at x37500 or the Center Director's Safety Hotline at x31234.

The Close Call System, Safety Action Hotline and the Center Director's Safety Hotline all are confidential and will guard the reporting employee's identity unless permission is given to use their name.

Many close call reports are coming in regarding pedestrians nearly being hit by automobiles while using the crosswalks. This is the most reported type of close call in the system. For this reason, the Executive Safety Committee has appointed an ad hoc sub-committee to study and find ways to eliminate the hazard. The results of this subcommittee's effort will be forthcoming soon.

A significant number of the reported crosswalk close calls occurred around Bldgs. 37 and 45.

Monitoring of this intersection has resulted in two recommendations. The first, which has been implemented, was to reduce the speed limit along this stretch of Avenue B to allow for greater visibility and reaction time. The second was to install a four-way traffic light at the intersection.

The traffic light would both enhance pedestrian safety and provide drivers with a clearly defined right-of-way when turning left onto Fifth Street. Design and planning are underway to implement this recommendation.

JSC Security has checked on the feasibility of moving the crosswalk, but studies showed the move would create a greater hazard to pedestrians by requiring employees to walk along Avenue B to reach the new crosswalk.

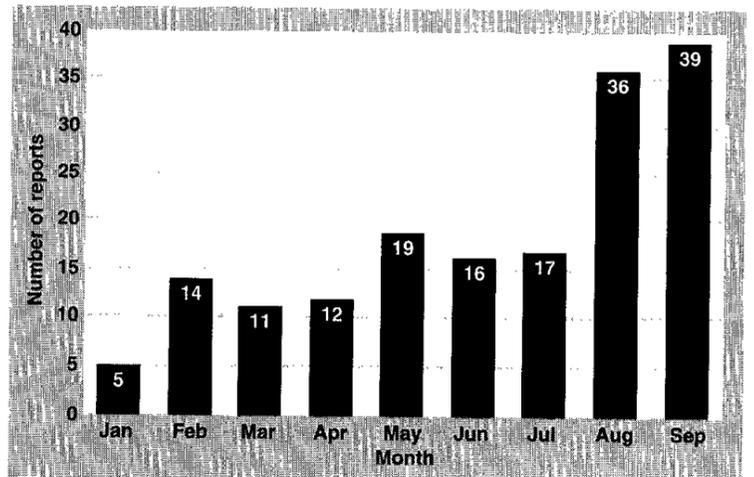
Another area of concern is the crosswalk near the West Avenue B gate near Bldg. 419. Drivers apparently are ignoring the 25 mph speed limit, thereby posing a hazard to pedestrians crossing the street. Employees are urged to obey the posted speed limit and be considerate of employees when going that route.

In general, close calls are pouring in at an unbelievable rate. In fiscal year 1995, a total of 213 close calls were reported from both JSC and Ellington Field. Nearly half of those came in after Safety Awareness Day.

The overwhelming response has made it difficult for center safety

officials to keep up with the pace, but they are endeavoring to respond in the manner employees expect and deserve. Employee participation is the key to success for the program and the overall safety posture of the entire center, and safety officials are dedicated to fostering this involvement.

JSC Close Call Reports



Material Safety Data Sheets hold hazardous chemical details

By Sean Keppta

JSC's Safety Action Hotline continues to receive calls about a variety of potential safety hazards, some of which have a broad application around the center.

Some of the calls are simply questions posed by employees who want to know more about conditions in their workplaces. JSC's Occupational Health and the Health, Safety and Environmental Compliance Offices prepared the following response to one recent question.

Question: I have a concern about the quantity of chemicals I have seen in my building. How do I know if they are hazardous or if they are stored properly?

Answer: The best reference for evaluating the potential hazards associated with any chemical is its own Material Safety Data Sheet. According to current regulations, no chemical may be brought on site without an accompanying MSDS.

The MSDS, developed from available information about the substance, identifies specific hazards, first aid and emergency procedures as well as proper handling and storage requirements and/or recommendations for that particular chemical/material.

Any chemical used in any JSC facility is required to have a hazard assessment before use. This assessment lets employees know what type of hazards chemicals could present in the facility based on the toxicity of the chemical, the

quantity of the chemical and its intended use.

The OSHA Hazard Communication Standard requires all employees who work with potentially hazardous substances be trained on safe use and storage. An additional OSHA standard for employees who work in a laboratory, Occupational Exposure to Hazardous Chemicals in Laboratories Standard, requires employees to be trained in procedures to prevent exposure to chemicals, safe handling, storage and personal protective equipment.

JSC provides a Hazard Communication Program which goes well beyond what OSHA considers adequate training. All JSC employees are required to attend the class that teaches hazards associated with various families of chemicals found at JSC, as well as MSDS instruction and how to read the MSDS. This class will be combined with the emergency response awareness level course and will inform employees of the chemicals stored in large quantities at JSC that pose a hazard to personnel.

JSC also is working to implement a workable situation in which keeping a bare minimum of chemicals in work areas becomes the normal way of doing business. The concept is based upon the fact that, in almost every case, less storage poses less hazard.

When storing chemicals, there are two things to consider, the properties and quantities. Certain

chemicals cannot be stored together because of incompatibilities or other hazardous properties. For example, acids should never be stored with flammable materials.

OSHA, National Fire Protection Association standards require that flammable materials, based on class and quantity, be stored in an approved flammable storage cabinet. At JSC, employees are required to keep all such chemicals stored in a flammable storage cabinet. Non-flammable chemicals can be stored anywhere (within the restrictions of the MSDS) if they are compatible with the surroundings. All facilities have chemical inventories listing the names and quantities of all chemicals stored in that area.

Although facility managers are required to be acutely aware of what is being used in their facility, line management is directly responsible for the safety and health of their employees as well as the storage of any chemicals or potentially hazardous substances that may be used in their workplace.

But each employee must be responsible for his or her own safety. Employees are encouraged to stay informed, ask questions and report incidents.

For more information about toxicity or other hazards chemicals present, call the Occupational Health Office, x37896, or the JSC Health Safety and Environmental Compliance Office, x34342.



JSC photo by Benny Benevidas

SR&QA Deputy Director Steve Nagel, right, and assistant to the director Rich Dinkel draw the winning names in the smoke detector give-away held Oct. 16 in recognition of Fire Prevention Week.

'Watch What You Heat! Prevent Home Fires'

Safety office gives away home smoke detectors

Ten JSC employees won smoke detectors last month in a special drawing held as part of National Fire Prevention Week.

The Health, Safety and Environmental Compliance Office awarded the detectors to employees and contractors who had filled out a coupon published in the Sept. 29 edition of the Director's Safety Page.

Steve Nagel, deputy director of Safety, Reliability and Quality Assurance, drew the winning names while Rich Dinkel, assistant to the SR&QA director, served as the official rules mediator for the contest.

The winners were: Frank Newman, Stan Hutchison, Reta Warren, Harold Battaglia, Kimberly Kirby, Lisa Stephens, Mark Myers, Amber Bender,

Clarence Blume and Carolyn Fisher.

This year's theme for Fire Prevention Week was "Watch What You Heat! Prevent Home Fires." The 1995 campaign is designed to fight home fires by focusing on three important fire-prevention reminders:

1. Watch what you heat—Keep a constant eye on stovetop cooking and know how to recognize and remove fire hazards in the kitchen.

2. Watch what you heat—Keep at least three feet between heating equipment and anything that can burn and never leave space heaters unattended.

3. Watch what you heat—Never carelessly discard matches or lighters or leave them within reach of children.

Drivers, bicyclists must increase caution

Bicyclists and motorists alike need to take greater care at JSC's west Avenue B entrance during morning rush-hour traffic, according to the JSC Security Office. The reason is simple—the entrance is too narrow to allow a dedicated bicycle lane, so

two and four-wheeled vehicles must use the same space.

The danger may increase as employees are forced to abide by the Environmental Protection Agency's standards and bicycles become a more common mode of

commuting. Drivers entering work through the back gate are urged to use caution and watch for bicyclists.

Bicyclists should practice the same caution, watch for cars, obey all street signs and keep both hands on the handlebars.

Conference offers safety forum

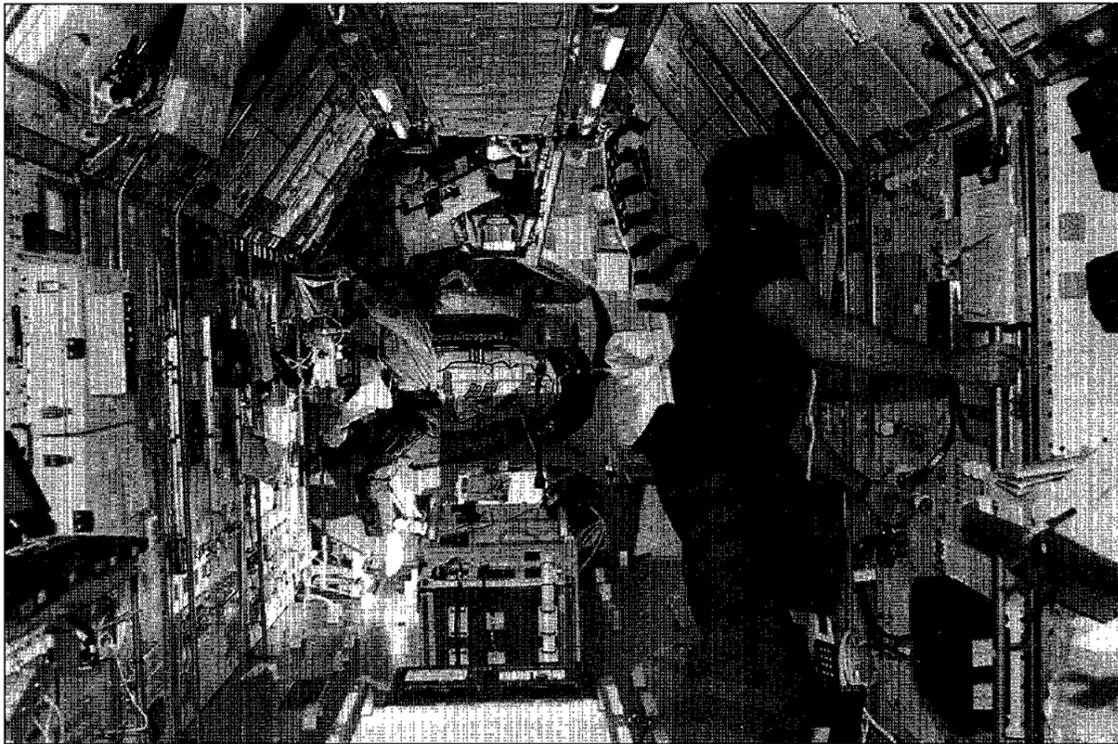
(Continued from Page 3)
safety and management commitment. It's inspiring to see so much emphasis placed on voluntary improvement of occupational safety and health in the workplace."

The VPPPA was established in 1985 by representatives of company work sites that were part of the VPP. Its purpose is to empha-

size the importance, improvements, and excellence in employer-provided site specific occupational safety and health programs. Participants must meet rigorous standards to become members. Evidence suggests that managed safety programs are far more effective in reducing injury and illness than OSHA inspections alone.

The Director's Safety Page is a health and safety publication produced by the Health, Safety and Environmental Compliance Office (NA3) at the Johnson Space Center.

For information, feedback, or to submit articles to be considered for the next issue, contact Rindy Carmichael at 244-5078, mail code HEI/B225.



Zero-G Science

Scientists on ground, astronauts on orbit interact for success



The second longest shuttle flight to date returned to Earth with a hoard of scientific data tucked away in the United States Microgravity Laboratory.

Columbia and its seven-member crew completed nearly 16 days of microgravity experiments in space.

The USML-2 mission demonstrated the efficiency of interactive science in the operation of experiment hardware as science teams at the Spacelab Payload Operations Control Center in Huntsville, Ala., sent remote commands to their equipment or worked with scientists in orbit to adjust their experiments on the spot.

During the flight, the crew collected memorable moments on film to share. From left to right, top to bottom:

1) This wide view gives an overall perspective of the working environment for the crew in USML-2.

2) The Kalahari desert in Namibia, Africa, forms the backdrop for this view from outside the payload bay doors.

3) Payload Commander Kathy Thornton explores the inner workings of the Drop Physics Module.

4) Mission Specialist Mike

Lopez-Alegria changes film in a camera on the flight deck of *Columbia*.

5) Pilot Kent Rominger retrieves gear necessary for sampling the air on board *Columbia*.

6) Thornton and Commander Ken Bowersox observe a liquid drop's activity at the Drop Physics Module.

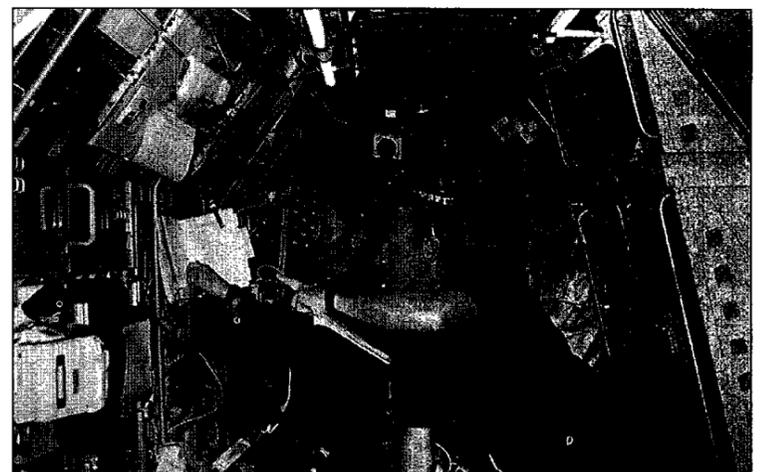
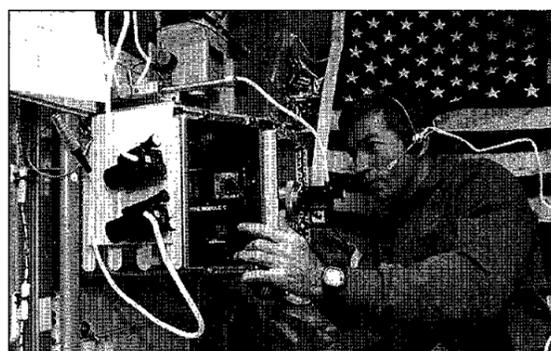
7) Payload Specialist Al Sacco inspects a crystal in a cylindrical autoclave on the middeck of *Columbia*.

8) Payload Specialist Fred Leslie makes use of the versatile USML-2 glovebox to conduct an investigation with the Oscillatory Thermo-capillary Flow Experiment that studied the shapes that fluid surfaces assume in microgravity.

9) The traditional in flight crew portrait shows, from left to right, top to bottom, Sacco, Rominger, Mission Specialist Cady Coleman, Leslie, Thornton, Lopez-Alegria and Bowersox.

10) Bowersox studies the movement of fluids in microgravity at the Geophysical Fluid Flow Cell workstation.

11) Coleman settles in for a session of work at the glovebox on the starboard side of *Columbia*. □



Culbert earns national award for technology management

Chris Culbert, manager of the Information Technology Office, recently was chosen as one of four silver winners of the Award for Achievement in Managing Technology by the American Management Systems and Carnegie Mellon University's Graduate School of Industrial Administration.

Culbert was nominated for his leadership in the development and implementation of two new technologies—Intelligent Computer-Aided Training and Virtual Environment Technology. Culbert accepted the award at a dinner on Nov. 14 in Washington, D.C.

Culbert played a pivotal role in both the development and successful deployment of advanced training technologies within JSC. He successfully achieved and maintained credibility with a talent-

ed and diverse workforce while effectively championing the use of this new technology within a con-

JSC

People

servative operational community, according to the nomination.

The ICAT system, currently in use to train astronauts, interfaces several computers and develops detailed simulations that recreate complex operational environments. The software can be modified to incorporate new procedures and hardware to simulate different training scenarios. ICAT technology is currently being used to develop a high school physics tutor.

The VET system was used extensively to train astronauts for the Hubble Space Telescope maintenance mission. More recently, it has been used to develop more advance training for international crews that will work together on the International Space Station. Several industries are investigating the commercial aspects of this system.

Mendez lauded for customer service

Bitsey Mendez of the Financial Management Division recently received an "Outstanding Customer Service" award from Allied Signal for her outstanding support and dedication.

Mendez was cited for her diligent efforts in processing vendor invoices in a timely and efficient manner. Mendez is the first to receive this



Culbert



Mendez



Cox



Chauvin

award in her branch.

Two secretaries earn top honors

JSC secretaries Linda Chauvin and Claire Cox recently received the Marilyn J. Bocking Award for Secretary Excellence for October and November.

Chauvin, the secretary to the director of Space Shuttle Operations, was cited for her exemplary leadership, initiative and dedication, as well as for her vast knowledge of the operations of the Space Shuttle Program.

She also was honored for her

ability to maintain the director's busy calendar and handle routine office responsibilities.

Cox, lead secretary for the Flight Crew Operations Business Management Office, was recognized for being instrumental in the initiation and implementation of office administration in the recently reorganized Business Management Directorate.

She was able to establish all office action tracking, procedures and correspondence control for the newly founded FCOD BMO, coordinating existing procedures from several merging offices and creating new procedures consistent with the new office.

Physicists find clues to origin of cosmic rays

Physicists from Japan and the United States have discovered a possible solution to the puzzle of the origin of high energy cosmic rays that bombard Earth from all directions in space.

Using data from the Japanese/U.S. X-ray astronomical satellite ASCA, physicists have found what they term "the first strong observational evidence" for the production of these particles in the shock wave of a supernova remnant, the expanding fireball produced by the explosion of a star.

Cosmic rays were discovered in 1912 by the Austrian physicist Victor Hess, who subsequently received the Nobel Prize in Physics for that work. They are subatomic particles, mostly electrons and protons, that travel near the speed of light. Ever since their discovery, scientists have debated where cosmic rays come from and how ordinary subatomic particles can be accelerated to such high speeds.

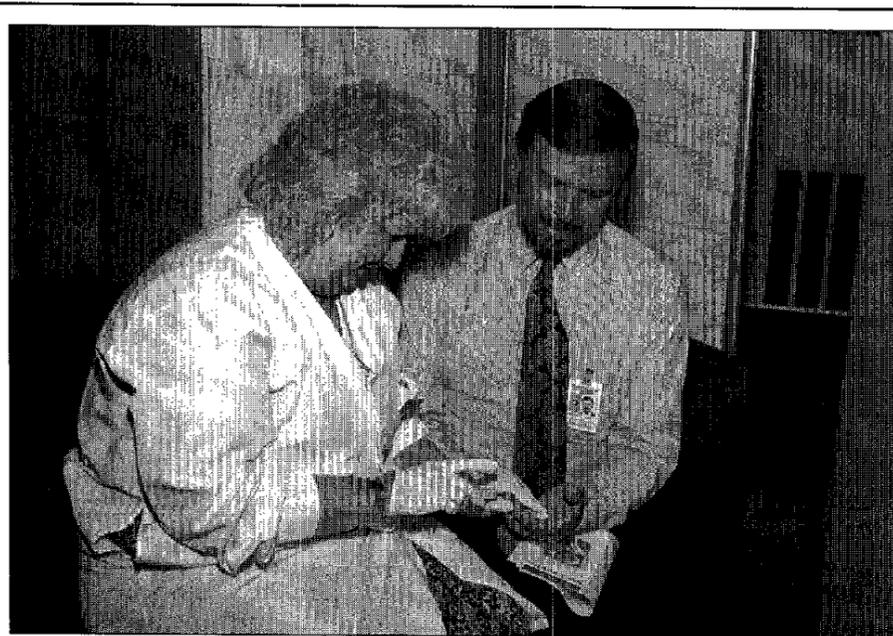
The international team of investigators used the satellite to determine that cosmic rays are generated at a high rate in the remains of the Supernova of 1006 AD—which appeared to medieval viewers to be as bright as the Moon—and that they are accelerated to high velocities by a process first suggested by the nuclear physicist Enrico Fermi in 1949.

The satellite contains telescopes for simultaneously taking images and spectra of X-rays from celestial sources, allowing astronomers to distinguish different types of X-rays from nearby regions of the same object.

The tell-tale clue to the discovery was detection of two oppositely-located regions in the rapidly expanding supernova remnant, the debris from the stellar explosion. The two regions glow intensely in what is called synchrotron radiation, produced when electrons move at nearly the speed of light through a magnetic field in space. The remainder of the supernova remnant, in contrast, produces ordinary "thermal" X-ray emission.

The cosmic rays are accelerated in the two regions that glow with synchrotron radiation, the physicists concluded. Charged particles accelerate to nearly the speed of light and energies of 100 trillion electron volts as they bounce off turbulent regions inside the shock. Like a ping pong ball bouncing between a table and a paddle while the paddle is brought ever closer to the table, an electron, proton or an atomic nucleus bounces back and forth within the supernova remnant, continually gaining speed, until it attains a high energy.

"Since we found cosmic ray acceleration under way in the remnant of Supernova 1006, this process probably occurs in other young supernova remnants," said Dr. Robert Petre of NASA's Goddard Space Flight Center's Laboratory for High Energy Astrophysics.



JSC Photo by Benny Benavides

SWEET ENOUGH—Nurse Nancy White performs glucose testing on Robert Spann during the Nov. 8 Pond Party that marked the anniversary of the Total Health employee wellness program. Representatives of all aspects of the Total Health Program shared information in several buildings and around the mall duck ponds.

Health Fair is Wednesday

It's open season for the Federal Employees Health Benefits program, and employees who need more information can attend the annual Health Fair from 9 a.m.-2:30 p.m. Wednesday in the Gilruth Center ballroom.

During open season, which runs through Dec. 11, employees will have the opportunity to enroll or change health coverage, or change self or dependent coverage. Changes will become effective in January.

The Health Fair, sponsored by the Human Resources Office, offers employees an

opportunity to meet with representatives from nearly all health plans to discuss the changes in the 1995 benefits. Other companies will be offering nonfederal benefits for dental and vision care and financial planning.

Representatives from NASA Employee Benefits Association life insurance and the National Association of Retired Federal Employees will provide information about their programs.

Employees can get more details from Employee Services in Bldg. 45, Rm. 140, or by calling x32681.

STS-74 crew shares bittersweet farewell with Mir-20 crew

(Continued from Page 1)

Manley, and Secretary General of the United Nations Boutros-Boutros Ghali.

"We have the same objectives, the U.N. secretary-general told the crew. "Yours is peace and cooperation in outer space. Our objective is peace and cooperation on Earth."

With the transfer activity complete, the crews bid each other a final farewell before closing the hatches between the two spacecraft in preparation for *Atlantis'* departure from Mir.

The eight men aboard the combined spacecraft bid each other farewell with boisterous handshakes and a short chorus of the song, "Those Were the Days."

"It's a bittersweet moment as we leave three friends up here to stay," Ross said as the hatches closed, separating the STS-74 crew from the Mir 20 crew, which is scheduled to remain on board Mir for another three months.

"We've come to the end of the most successful mission I could

imagine," Cameron added.

Springs in the capture ring of the docking module gently pushed *Atlantis* away from Mir at 2:16 a.m. CST Nov. 18. Cameron then fired *Atlantis'* jets to begin a very slow maneuver away from Mir.

Before departing, *Atlantis* flew two revolutions around Mir as the astronauts on board documented the condition of the space station with their on-board cameras. With that complete, Cameron and Halsell then performed two burns of the orbiter

maneuvering jets to lower and circularize *Atlantis'* orbit.

The crew's final full day on orbit was dedicated to stowage of some of the last Mir transfer items and preparations for *Atlantis'* return to Earth. Landing occurred at 11:01 a.m. CST Nov. 20 on KSC's Runway 33 as flight controllers took advantage of excellent weather conditions on the first deorbit opportunity of the day.

The STS-74 crew members will discuss their visit to Mir at 2 p.m. Dec. 6 in Teague Auditorium.

Wind satellite provides early warning

(Continued from Page 1)

and electrified subatomic particles ejected from the outer atmosphere or corona of the Sun.

About 30 minutes after the front edge of the giant cloud passed over the Wind probe, it swept over Japan's GEOTAIL satellite, which was located on the sunward side of the Earth in its 120,000 by 40,000 mile elliptical orbit. GEOTAIL also gathered important scientific data. Minutes later, the disturbance struck the outer limits of the Earth's

magnetic field, which acts as a protective buffer. The impact compressed the magnetic field on the sunward side of the Earth and stretched it out away from the Sun on the night side, triggering the magnetic storm and aurora.

"It was detected with instruments on Wind that sense the magnetic fields, particles and waves in interplanetary space," Ogilvie said. "This is a good example of what we had been expecting since Wind was launched Nov. 1, 1994. This won-

derful observation is a great first birthday present from Wind."

A complete analysis of the Oct. 18 Wind data, and data from other spacecraft and instruments, may take months or years, but is expected to tell scientists much about how interplanetary disturbances propagate through space and affect the Earth's environment. Future disturbances are anticipated as the 11-year sunspot cycle is expected to peak shortly after the year 2000, according to NASA scientists.

Moratorium cuts cable installation

JSC has placed a sitewide moratorium on the installation and removal of all communications cables in an effort to rein in the proliferation of superfluous and redundant wiring at the center.

The moratorium applies to all cabling at exterior facility locations, the utility tunnel system and within site buildings. Communications cabling include; audio, video and data links, and applies to single/multi-pair wire, coaxial/twin-axial wire, and fiber optic systems.

Case-by-case exceptions to the moratorium will only be authorized by the Executive Safety Committee based on the recommendation of the affected directorate.

The moratorium will remain in effect until a sitewide installation/removal communications cable policy is established.

STS-73 employee briefing will be rescheduled later

The STS-73 post-flight briefing for employees, which had been set for Wednesday, will be rescheduled for a later date.

The on-site presentation by Commander Ken Bowersox, Pilot Kent Rominger, Mission Specialist Kathy Thornton, Cady Coleman and Michael Lopez-Alegria and Payload Specialists Fred Leslie and Albert Sacco was postponed as a result of last week's furlough. At the beginning of the ceremony, each of the astronauts will receive their Space Flight Medals.

The STS-73 crew made its presentation to the public Wednesday at Space Center Houston.

In addition, the STS-74 crew members will discuss their visit to Mir at 2 p.m. Dec. 6 in Teague Auditorium. That briefing also will be preceded by the presentation of Space Flight Medals.

Apollo 13 videos at Exchange Store

The JSC Exchange Store has a limited number of Apollo 13 videos available for sale this week.

The sale price is \$15.50. The Exchange Store is open from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday.

Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

Editor Kelly Humphries
Associate Editor Karen Schmidt